

AFM Unit 2C Test Review

1. Solve $\log(8n + 4) = 2$
2. For $f(x) = 3x - 2$, find $f(-2)$
3. Solve $\ln(x - 5) = 1$
4. An account with an initial deposit of \$6,500 earns 7.25% annual interest, compounded continuously. How much will the account be worth after 10 years?
5. Simplify $\ln(e^2)$
6. Expand: $\log(\sqrt{x^3y^{-4}})$
7. Expand: $\log\left(\frac{x^{15}y^{13}}{z^{19}}\right)$
8. Expand: $\log_2 \frac{13}{17}$
9. The weight of an object above the surface of the Earth varies inversely with the square of the distance from the center of the Earth. If a body weighs 50 pounds when it is 3960 miles from Earth's center, what would it weigh if it were 3970 miles from Earth's center?
10. Express as a single logarithm: $\log(x) - \frac{1}{2}\log(y) + 3\log(z)$
11. Express as a single logarithm: $2\log(x) + 3\log(x + 1)$
12. Suppose you invest \$500 at an annual interest rate of 6% compounded continuously. How much will you have in the account after 25 years?
13. Solve: $\ln(3x) = 2$
14. Evaluate the logarithm: $\log(0.001)$
15. Evaluate the logarithm: $\log_2 \frac{1}{32}$
16. y varies directly as x . When $x=3$, then $y=12$. Find y when $x=20$.
17. A deposit account paid approximately 2.5% interest during the years of 2010 and 2015. In 2010, a woman opened an account with an initial deposit of \$10,000. If the interest remained the same, write an equation to best represent the woman's account. (Let $t=0$ for 2010).
18. Write the equation in logarithmic form: $x^{\frac{10}{13}} = y$
19. Write the equation in exponential form: $\log_y 137 = x$
20. Solve: $2 \cdot 10^{9a} = 29$
21. The half-life of Erbium-165 is 10.4 hours. Initially, there are 200 grams of Erbium-165. Write an equation to show the amount of Erbium-165 remaining after x years.
22. If y varies directly with x , when $x=6$, $y=12$. Find y when $x=16$.
23. Solve: $\log(4x^2 - 10) + \log(3) = \log(51)$
24. You purchased a car for \$30,000. The value of the car decreases by 13% each year. What will be the approximate value after 7 years?
25. An initial population of 560 bass increases at an annual rate of 5.5%. Write an exponential function to model the bass population.
26. A certain radioactive element has a half-life of 20 years. If 550 grams of the element were present initially, how many grams will be left after 19 years?